

EXHIBIT 54

[Print](#)[Close](#)**A1168**

October 20, 2009

9:00 AM - 11:00 AM

Room Area A

Don't Forget To Change the Bair Hugger Filter

****** Mark P. Gjolaj, M.D., Scott Ahlbrand, M.D., Imad M. Yamout, M.D., Donald Armstrong, John G. Brock-Utne, M.D., Ph.D.

Anesthesia, Stanford University Medical School, Stanford, California

Introduction

Forced air patient warming system such as Bair Hugger (BH) Augustine Medical Inc. Eden Prairie, MN, USA is a clinically effective patient warming device. However a potential disadvantage is that the BH may blow contaminated air.

Material and Methods

Under sterile conditions, cotton swabs were taken from the distal end of the BH tubing and the filter of the BH housed in each OR. All swabs were inoculated onto a Petri dish. Petri dishes were also exposed to ambient air from 29 OR's. The study was done at the time when the BH filters were recommended to be changed [after 6 months or more than 500 hours of usage]. The old filters were discarded and replaced. Three months later the study above was repeated.

Results

In the initial study we found that 8 out of 29 OR's to have had pathological growth. The distal ends of the Bair Huggers were positive for growth in 12 out of 29. Three Bair Hugger filters were positive. Three months later a repeat of the 8 positive OR's, 12 distal ends and the three Bair Huggers showed no growth.

Conclusion

The importance of changing the Bair Hugger filters is confirmed by the study. However the optimum timing as to when the filters should be changed is not clear. More studies are obviously needed. As an added safety feature, it has been recommended that an additional microbial filter be fitted to the distal end of the BH hose (1). The recommendation as to when this filter should be changed is unknown.

Reference

1. Avidan MS, Jones N, Khoosal M, Lundgren C, Morrell DF

Convection warmers – not just hot air. *Anaesthesia* 52. 1073-1076. 1997.

From Proceedings of the 2009 Annual Meeting of the American Society Anesthesiologists.